

## **OBSERVATIONS OF A BROWNTAIL WARRIOR, by Charlotte Kahn**

*The following is based on observations over one season and may not apply to other seasons.*

The dearth of details about the browntail moth's lifecycle contributes to the idea that environmentally questionable spraying, expensive tree injections and the rare wet spring are the only defenses we have. While last year's wet spring and tree injections may indeed have done much to reduce this year's browntail population, last year's dystopian abundance offered the opportunity to carefully observe and experiment with ways to intervene in their life cycle. What we learned is that they are vulnerable to simple methods of counterattack at specific stages of their lives.

Overwintering in colonies in tall trees, mostly red oak, the larvae emerge in late April/May from tough nests of silken thread nine months after hatching the previous August. They feed on the leaves of their host plant, returning to their nests when cold. After stripping the leaves of their host trees, they descend around Memorial Day on spun threads looking for their next hearty meal. They make their appearance in our lives as fuzzy black caterpillar larvae with two red spots on their backs.

Once descended, they climb on and decimate the leaves of fruiting trees and shrubs, with a preference for those near the warmer shore: wild cherry; serviceberry (shadbush, amelanchier); hawthorn; blueberries; apples; beach plums; and rosa rugosa (the taller of these species also sometimes contain winter nests). They can also favor flowering garden plants such as Lady's Mantle and potentilla.

**Feeding in clusters at lower heights, multitudes of the caterpillars can be killed by squirting them several times with a harmless (for us) mixture of soap and water. The very rough formula is a half cup of Murphy's Oil Soap, a quarter cup of dish detergent and water to fill a 32-ounce household spray bottle. (That may be heavy on the soaps. Please experiment).**

At this point, probably seeking warmth, the caterpillars are strongly attracted to black. Observers have seen them heavily clustered on black tires, black grills and black plastic trash containers – all within easy reach of the spray bottle. (As an experiment this spring, let's put tar paper or black objects in the sun under oaks to see whether the caterpillars will cluster where we can easily reach them).

The larvae shed five times as they grow. After their spring feeding frenzy in clusters, their behavior seems to be more individualistic but they can still be killed by spraying them with the soapy formula. Each caterpillar removed means 25– 400 fewer eggs.

In June, the caterpillars cluster again to construct reddish-brown gauzy cocoons, each containing 3 -7 or so caterpillars. These tend to be concentrated under roof overhangs, often on less inhabited structures. At this stage it is easy – with a ladder—to remove the cocoons with a stick, as the caterpillars and toxic hairs are enclosed in sticky material. The cocoons can then be safely placed in soapy water.

They emerge from the cocoons as stark white moths with brown abdomens in late June/July, when they cluster again, this time at night around lights. On Bustins Island, they are particularly attracted to three lights left on all night: one on the side of the shed facing the entrance to the public dock; one at the top

of the path leading to the dock near the post office; and one at the corner of the Roberts property on the south-facing road. Immobile at night and into the late morning, they can easily be sprayed with water, which prevents their flight. As they drop to the ground, they can be stomped on.

When the moths do fly, they tend to flutter low to the ground, where adults and children can stomp on them with the soles of their shoes. (What can look like a white moth feeding on a flower is actually a small butterfly. Browntails do not eat flower nectar.)

After less than a month of life as a moth, each now sexually mature browntail (or just the females, I guess) lays 100-400 eggs on a leaf in late July/early August, often on a low-growing shrub such as wild cherry and shadbush (amelanchier). They whorl and fold the leaf over their eggs, then die, leaving their brown tail of toxic hairs as a protective layer over the eggs.

In late August/early September, the eggs hatch as tiny light beige larvae with two distinctive red dots on their back. The squirming larvae cluster on their whorled leaves in spaces not much bigger than a quarter or silver dollar. This is a dangerous stage for handling, given the presence of their mothers' toxic hairs, but the whorled leaves full of eggs or tiny larvae can be safely removed by cutting off the end of the branch holding the whorled leaf and putting it into the soapy solution.

Once hatched, the browntail larvae feed a bit before clustering again in tall trees, where they construct nests from a whorled leaf bound with strong silken thread in which to overwinter until the following spring. During that period in their life cycle, they are beyond our reach but vulnerable to chemicals injected into or on their host trees the previous spring. (For information on tree injections, which must occur in the early spring to be effective, ask Craig Allard or Dave McCoy, who coordinated the injections with a licensed arborist.)

The bottom line is that we are not helpless, and can to a greater extent than we knew actively protect our close environments from the browntail moths' toxicity. Remember: The browntail moth has no natural enemy other than us and no natural predator other than cuckoos, which are literally a rare bird in Maine.

### **Browntail Warriors**

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*Editors' note:* On April 18 Freeport hosted an excellent presentation by state forest entomologist Allison Kanoti and arborist Mike Hughes. A video of the presentation, including some good questions and useful answers, will be scheduled for Bustins viewing this summer. To see it sooner (available in May) go to [fctv3.viebit.com](http://fctv3.viebit.com). Look under "miscellaneous". Freeport residents can also watch it on local access TV, channel 3. In addition, the Power Point will be available at [freeportmaine.com](http://freeportmaine.com), Quick Links, Tick and Browntail Moth info. However, the discussion that took place at the actual presentation was most helpful.